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CLAIMS

What is claimed is:

1. A computer implemented method for calculating an importance rank for N linked nodes of a linked database, the method comprising the steps of:

5 (a) selecting an initial N-dimensional vector **p**0;

- (b) computing an approximation \mathbf{p}_n to a steady-state probability \mathbf{p}_{∞} in accordance with the equation $\mathbf{p}_n = \mathbf{A}^n \mathbf{p}_0$, where \mathbf{A} is an NxN transition probability matrix having elements $\mathbf{A}[i][j]$ representing a probability of moving from node i to node j; and
- (c) determining a rank r[k] for a node k from a k^{th} component of \mathbf{p}_n .
- 2. The method of claim 1 wherein the matrix A is chosen so that an importance rank of a node is calculated, in part, from a weighted sum of importance ranks of backlink nodes of the node.
- 3. The method of claim 2 wherein the importance ranks of each of the backlink nodes is weighted in dependence upon the total number of links in the backlink node.
- 4. The method of claim 1 wherein the matrix A is chosen so that an importance rank of a node is calculated, in part, from a constant α representing the probability that a surfer will randomly jump to the node.
- The method of claim 1 wherein the matrix A is chosen so that an importance rank of a node is calculated, in part,

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from	a	measure	of	distances	between	the	node	and	backlink
		of the no			,		,		

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The method of claim 1 wherein the initial N-dimensional 6. vector \mathbf{p}_0 is selected to represent a uniform probability distribution.

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7. vector **p**₀ is selected to represent a non-uniform probability distribution, wherein a predetermined set of nodes is given a relatively large initial probability.

A computer implemented method for assigning a rank to N

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8. nodes of a linked database, the method comprising calculating, for a node, a weighted sum of ranks of backlink nodes to the node, wherein each of the backlink nodes is weighted in

dependence upon the total number of links in the backlink node.

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